Courtesy Copy of the Unamended Claims

1. (currently amended) A receiver, comprising:

a detector adapted to demodulate a received signal to generate a received word, the received word including a plurality of received symbols, each of the received symbols containing data associated with a first phase and data associated with a second phase, the detector being further adapted to generate a plurality of energy values relating each of the received symbols to one of a plurality of potential symbols; and

a decoder adapted to generate a first set of bit metrics based on the energy values in response to the receiver being assigned to the first phase and a second set of bit metrics based on the energy values in response to the receiver being assigned to the second phase, the decoder being further adapted to identify the least reliable bits in the received word based on one of the first and second sets of bit metrics.

2. (original) The receiver of claim 1, wherein the decoder is further adapted to generate a plurality of candidate codewords based on the received word and the least reliable bits.

3. (currently amended) The receiver of claim 2, wherein the decoder is adapted to generate a word metric comprising the sum of the bit metrics in one of the first and second sets for each of the plurality of candidate codewords.

4. (currently amended) The receiver of claim 3, wherein the decoder is adapted to identify the candidate codeword having ~~the greatest~~ a greatest bit metric as a received codeword.

5. (original) The receiver of claim 1, wherein the detector comprises an envelope detector including a plurality of filters, each filter being adapted to generate a soft symbol energy associated with one of the potential symbols.

6. (currently amended) The receiver of claim 5, wherein a first subset of the potential symbols correspond to a binary 1 for the first phase and a second subset of the potential symbols correspond to a binary zero for the first phase, and the decoder is adapted to select the soft symbol energy in each of the first and second subsets closest to an upper bound energy threshold to generate the first set of bit metrics.

7. (currently amended) The receiver of claim 6, wherein a third subset of the potential symbols correspond to a binary 1 for the second phase and a fourth subset of the potential symbols correspond to a binary zero for the second phase, and the decoder is adapted to select the soft symbol energy in each of the second and third subsets closest to an upper bound energy threshold to generate the second set of bit metrics.

8. (currently amended) The receiver of claim 1, wherein the detector comprises a discriminator detector adapted to generate an output energy, and the decoder is adapted to compare the output energy to a plurality of potential symbol energy thresholds to generate soft energies associated with the potential symbols ~~values~~.

9. (currently amended) The receiver of claim 8, wherein the decoder is adapted to clip the ~~soft~~ energy values at a maximum value.

10. (currently amended) The receiver of claim 8, wherein the decoder is adapted to generate a channel attenuation estimate for each of the received symbols and generate one of the first and second sets of bit metrics based on the channel attenuation estimate.

11. (currently amended) The receiver of claim 8, wherein a first subset of the potential symbols correspond to a binary 1 for the first phase and a second subset of the potential symbols correspond to a binary zero for the first phase, and the decoder is adapted to select ~~the~~ a soft symbol energy in each of the first and second subsets closest to the associated potential symbol energy threshold to generate the first set of bit metrics.

12. (currently amended) The receiver of claim 9, wherein a third subset of the potential symbols correspond to a binary 1 for the second phase and a fourth subset of the potential symbols correspond to a binary zero for the second phase, and the decoder is adapted to select ~~the~~ a soft symbol energy in each of the second and third subsets closest to the associated potential symbol energy threshold to generate the second set of bit metrics.

13. (currently amended) A method for assigning bit metrics for algebraic decoding in a receiver, comprising:

demodulating a received signal to generate a received word, the received word including a plurality of received symbols, each of the received symbols containing data associated with a first phase and data associated with a second phase;

generating a plurality of energy values relating each of the received symbols to one of a plurality of potential symbols;

generating a first set of bit metrics based on the energy values in response to the receiver being assigned to the first phase and a second set of bit metrics based on the energy values in response to the receiver being assigned to the second phase; and

designating the least reliable bits in the received word based on one of the first and second sets of bit metrics.

14. (original) The method of claim 13, further comprising generating a plurality of candidate codewords based on the received word and the least reliable bits.

15. (currently amended) The method of claim 14, further comprising generating a word metric comprising the sum of the bit metrics in one of the first and second sets for each of the plurality of candidate codewords.

16. (currently amended) The method of claim 15, further comprising designating the candidate codeword having ~~the greatest~~ a greatest bit metric as a received codeword.

17. (original) The method of claim 13, further comprising generating a soft symbol energy associated with each of the potential symbols.

18. (currently amended) The method of claim 17, wherein a first subset of the potential symbols correspond to a binary 1 for the first phase and a second subset of the potential symbols correspond to a binary zero for the first phase, and the method further comprises selecting the soft symbol energy in each of the first and second subsets closest to an upper bound energy threshold to generate the first set of bit metrics.

19. (currently amended) The method of claim 18, wherein a third subset of the potential symbols correspond to a binary 1 for the second phase and a fourth subset of the potential symbols correspond to a binary zero for the second phase, and the method further comprises selecting the soft symbol energy in each of the second and third subsets closest to an upper bound energy threshold to generate the second set of bit metrics.

20. (currently amended) The method of claim 13, further comprising:
generating an output energy associated with each of the received symbols; and
comparing the output energy to a plurality of potential symbol energy thresholds to generate soft energies associated with the potential symbols ~~values~~.

21. (currently amended) The method of claim 20, further comprising clipping the ~~soft~~ energy values at a maximum value.

22. (original) The method of claim 20, further comprising:
generating a channel attenuation estimate for each received symbol; and
generating one of the first and second sets of bit metrics based on the channel attenuation estimate.

23. (currently amended) The method of claim 20, wherein a first subset of the potential symbols correspond to a binary 1 for the first phase and a second subset of the potential symbols correspond to a binary zero for the first phase, and the method further comprises selecting ~~the~~ a soft symbol energy in each of the first and second subsets closest to the associated potential symbol energy threshold to generate the first set of bit metrics.

24. (currently amended) The method of claim 21, wherein a third subset of the potential symbols correspond to a binary 1 for the second phase and a fourth subset of the potential symbols correspond to a binary zero for the second phase, and the method further comprises selecting ~~the~~ a soft symbol energy in each of the second and third subsets closest to the associated potential symbol energy threshold to generate the second set of bit metrics.

25. (currently amended) A receiver, comprising:

means for demodulating a received signal to generate a received word, the received word including a plurality of received symbols, each of the received symbols containing data associated with a first phase and data associated with a second phase;

means for generating a plurality of energy values relating each of the received symbols to one of a plurality of potential symbols;

means for generating a first set of bit metrics based on the energy values in response to the receiver being assigned to the first phase and a second set of bit metrics based on the energy values in response to the receiver being assigned to the second phase; and

means for designating the least reliable bits in the received word based on one of the first and second sets of bit metrics.